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MITSUBISHI HEAVY INDUSTRIES, LTD.
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TOKYO, JAPAN

September 18, 2009

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Attention: Mr. Jeffrey A. Ciocco

Docket No. 52-021
MHI Ref: UAP-HF-09457

Subject: MHI's Response to US-APWR DCD RAI No. 439-3311 Revision 1

Reference: 1) "Request for Additional Information 439-3311 Revision 1, SRP Section: 11.03 - Gaseous Waste Management System, Application Section: 11.3," dated August 12, 2009.

With this letter, Mitsubishi Heavy Industries, Ltd. ("MHI") transmits to the U.S. Nuclear Regulatory Commission ("NRC") a document entitled "Response to Request for Additional Information No. 439-3311 Revision 1."

Enclosed is the response to the RAI contained within Reference 1.

Please contact Dr. C. Keith Paulson, Senior Technical Manager, Mitsubishi Nuclear Energy Systems, Inc. if the NRC has questions concerning any aspect of the submittals. His contact information is below.

Sincerely,

Yoshiki Ogata
General Manager- APWR Promoting Department
Mitsubishi Heavy Industries, LTD.

Enclosure:

1. Response to Request for Additional Information No. 439-3311 Revision 1

CC: J. A. Ciocco
C. K. Paulson

Contact Information

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DOS/ NRC

Docket No. 52-021
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Enclosure 1

UAP-HF-09457
Docket Number 52-021

Response to Request for Additional Information
No. 439-3311 Revision 1

September 2009

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

9/17/2009

**US-APWR Design Certification
Mitsubishi Heavy Industries
Docket No. 52-021**

RAI NO.: NO. 439-3311 REVISION 1
SRP SECTION: 11.03 – Gaseous Waste Management System
APPLICATION SECTION: 11.3
DATE OF RAI ISSUE: 8/12/2009

QUESTION NO. : 11.03-14

Standard Review Plan (SRP) 11.3, Gaseous Waste Management System, includes a requirement to review “[s]ystem piping and instrumentation diagrams (P&IDs) and process flow diagrams showing methods of operation and factors that influence waste management”.

US-APWR DCD Tier 2, Rev 1, Section 11.3.2.1.5.1, Waste Gas Coolers, states “[T]he waste gas coolers lower the temperature of the gases exiting the dryer, allowing entrained moisture to condense before the gases enter the moisture separator tank”.

This seems to contradict the dryer data sheet, where the operating temperature is 104 deg. F with exit dewpoint of -22 deg. F. It is not clear to the staff how 100 deg. F cooling water can condense moisture from effluent gas of -22 deg. F dewpoint.

Therefore, the staff questions whether the cooler and separator should not be located upstream of the dryer.

ANSWER:

The cooler, as discussed in Section 11.3.2.1.5.1, cools the gas to ambient temperature around 104°F. Condensate is separated in the moisture separator tank. The gas is then forwarded to the molecular sieve dryer in which the moisture is further absorbed by the chemical. The dryer operates at ambient temperature. The gas exiting the dryer is very dry and has a moisture content equivalent to a dew point temperature of -22 °F. The -22 °F temperature refers to the moisture content of the gas stream and not the temperature of the gas exiting the cooler and the dryer. The DCD description is correct and no change is required.

Impact on DCD

There is no impact on the DCD

Impact on COLA

There is no impact on the COLA

Impact on PRA

There is no impact on the PRA

This completes MHI's response to the NRC's question.